GUI module **120** so that the 3D cylindrical menu is rotated in the downward direction and displayed on the touch screen **130**.

[0055] The controller **140** adjusts a rotational speed of the 3D cylindrical menu according to the manipulation of the touch screen **130** to control the rotation of the 3D cylindrical menu. For example, if a user strokes the 3D cylindrical menu using the touch screen **130** at a high speed, the controller **140** controls the GUI module **120** to rotate the 3D cylindrical menu at a high speed. On the other hand, if a user strokes the 3D cylindrical menu using the touch screen **130** at a low speed, the controller **140** controls the GUI module **120** to rotate the 3D cylindrical menu at a low speed.

[0056] If a user inputs a command to select one item from the 3D cylindrical menu using the touch screen **130**, the controller **140** controls the GUI module **120** to display one or more submenus associated with the item selected according to the input command.

[0057] In particular, if a user inputs a command to select one of the items from the 3D cylindrical menu using the touch screen **130**, the controller **140** generates on or more 3D cylindrical submenu, each having submenu items according to the input command. The controller **140** may control the GUI **130** to display the 3D cylindrical submenus separately at one side of the 3D cylindrical menu, or the controller **140** may control the GUI **130** to display the 3D cylindrical submenus in an overlapping manner at one side of the 3D cylindrical menu.

[0058] The touch screen **130** may be included in a flexible display apparatus (not illustrated), which has a bendable display panel to enable the display to form a cylindrical shape.

[0059] The controller **140** may control the GUI **130** to display an icon representing that there are the submenus at one or both sides of the 3D cylindrical menu. If a user clicks on the icon with a mouse or a touch pad button, or drags the icon using the touch screen **130**, the controller **140** may control the GUI **130** to overlap the 3D cylindrical submenus on one or more sides of the icon.

[0060] The controller **140** may generate a plurality of rotating 3D cylindrical menus having a series of numbers. The controller **140** receives a number selected by the user using the touch screen **130** from among the numbers displayed by the rotating 3D cylindrical menus.

[0061] The controller **140** may set a security function so that a user is allowed to use the multimedia apparatus **100** only if a number selected for input by the user corresponds to a preset password.

[0062] The controller **140** may control a volume setting of an audio output of the multimedia apparatus **100** according to a rotation of the 3D cylindrical menu. For example, if the 3D cylindrical menu is rotated in an upward direction, the controller **140** may control the audio output to increase in volume, and on the other hand, if the 3D cylindrical menu is rotated in a downward direction, the controller **140** may control the audio output to decrease in volume.

[0063] The controller **140** may adjust a tuner of a receiver (not illustrated) of the multimedia apparatus **100** to select a radio frequency according to a rotation of the 3D cylindrical menu. For example, if the 3D cylindrical menu is rotated in an upward direction, the radio frequency being selected increases in frequency, and on the other hand, if the 3D cylindrical menu is rotated in a downward direction, the radio frequency being selected decreases in frequency.

[0064] The controller **140** may search among stored multimedia files. For example, the controller **140** may generate a first cylindrical menu displaying an initial sound, or character, of the Korean alphabet, a second cylindrical menu displaying a middle sound, or character, of the Korean alphabet, and a third cylindrical menu displaying a final sound, or character, of the Korean alphabet. In the Korean language, one syllable is formed by combining the initial, middle, and final sounds, or characters. Accordingly, the controller **140** may control a storage medium (not illustrated) to search a multimedia file for a file title that begins with a combined syllable, since the syllable is composed by the sounds, or characters, selected according to a user manipulation of the touch screen **130**.

[0065] The controller **140** may generate a first cylindrical menu, a second cylindrical menu, and a third cylindrical menu displaying letters of the English alphabet. The controller **140** may combine, for example, three letters selected according to a manipulation of the touch screen **130** by the user. The controller **140** may control the storage medium (not illustrated) to search for a multimedia file having a title that begins with the combined three letters selected by the user, or in another embodiment to search for a title of a file having the combined three selected letters at any location in the title.

[0066] The controller **140** may control the operation of the multimedia function block **110** to execute a command to play multimedia content stored in a storage medium (not illustrated) when such a command is selected by a user.

[0067] The process of using a cylindrical menu will be explained in detail with reference to FIG. **2**, which is a flowchart illustrating a method to provide a GUI, which is a cylindrical menu according to an exemplary embodiment of the present general inventive concept.

[0068] Referring to FIG. **2**, in operation S**210**, the controller **140** controls the GUI module **120** to generate a 3D cylindrical menu displaying menu items on a surface of the 3D cylindrical menu, and to display the 3D cylindrical menu on a display, such as the touchscreen **130**.

[0069] In operation S**220**, the controller **140** determines whether a user strokes the touch screen **130** in an upward direction, and if so, in operation S**230** the controller **140** controls the GUI module **120** to rotate the 3D cylindrical menu in an upward direction.

[0070] If in operation S**220** the controller **140** determines that a user does not stroke the touch screen **130** in an upward direction, then in operation S**240** the controller **140** determines whether the user strokes the touch screen **130** in a downward direction. If it is determined in operation S**240** that the touch screen has been stroked in a downward direction, then in operation S**250** the controller **140** controls the GUI module **120** to rotate the 3D cylindrical menu in a downward direction.

[0071] If it is determined in operation S**240** that the touch screen has not been stroked in a downward direction, then in operation S**260** the controller **140** determines whether a user has selected a menu item by touching the touch screen **130** to select an item of the menu. If not, then the controller returns to operation S**220**. If the user has selected a menu item, then in operation S**270** the controller **140** controls the GUI module **120** to generate and display one or more 3D cylindrical submenus associated with the selected item, or controls the multimedia function block **110** to execute a multimedia item selected from the menu. For example, if a user selects the item "Music," the controller **130** controls the GUI module **120** to generate a 3D cylindrical submenu having submenu items such as "Album," "Track", and "Artist," which are related to and associated with the item "Music." If a user selects a music file such as "Holy Night.mp3," the controller **130** controls the multimedia function block **110** to play back the selected music file.

[0072] Various exemplary embodiments using a 3D cylindrical menu will be explained in detail with reference to